

# Country Presentation

Ministry of the Environment

Japan

5 October 2010

# History for Japan's Legislative Framework for a Sound Material-Cycle Society

Era	Situations	Establishment of Law
Post WWII ~ 1950s	<ul style="list-style-type: none"> <li>Waste Management for good environmental hygienic</li> <li>Keep the environment hygienic and comfortable</li> </ul>	<ul style="list-style-type: none"> <li>Public Cleansing Law(1954)</li> </ul>
1960s ~ 1970s	<ul style="list-style-type: none"> <li>Clear increase of industrial waste etc. and "Environmental Pollution" with the high Economic Growth</li> <li>Waste management for environmental protection</li> </ul>	<ul style="list-style-type: none"> <li>Basic Law for Environmental Pollution Control (1967)</li> <li>Waste Management Law (1970)</li> <li>Amended Waste Management Law (1976)</li> </ul>
1980s	<ul style="list-style-type: none"> <li>Promotion of the development of facilities for waste management</li> <li>Environmental Protection on Waste Management</li> </ul>	<ul style="list-style-type: none"> <li>Law for Bay Area Marine and Environment Consolidation Centers(1981)</li> <li>Septic Tank Law (1983)</li> </ul>
1990s	<ul style="list-style-type: none"> <li>Reduce/Recycle of Waste</li> <li>Establishment of Recycling Laws</li> <li>Measures against hazardous materials (inc. Dioxins)</li> <li>Appropriate waste management depends on the diversity of the types/properties of wastes</li> </ul>	<ul style="list-style-type: none"> <li>Amended Waste Management Law(1991)</li> <li>Law to Promote the Development of Specified Facilities for the Disposal of Industrial Waste (1992)</li> <li>Fundamental Environmental Law (1993)</li> <li>Container and Packaging Recycling Law(1995)</li> <li>Amended Waste Management Law(1997)</li> <li>Home Appliances Recycling Law(1998)</li> <li>Law Concerning Special Measures against Dioxins(1999)</li> </ul>
2000 ~	<ul style="list-style-type: none"> <li>Promotion of 3R towards the establishment of a Sound Material-Cycle Society</li> <li>strengthen the measures for industrial waste management</li> <li>Strengthen measures against illegal dumping</li> </ul>	<ul style="list-style-type: none"> <li>Fundamental Law for Establishing a Sound Material-Cycle Society(2000)</li> <li>Construction/Food Waste Recycling Laws(2000)</li> <li>Amended Waste Management Law(2000)</li> <li>Law Concerning Special Measures Against PCB Waste (2001)</li> <li>End-of-life Vehicles Recycling Law(2000)</li> <li>Law on Special Measures Concerning Removal of Environmental Problems Caused by Specified Industrial Wastes(2003)</li> <li>Amended Waste Management Law(2003-2006)</li> </ul>

Hygienic

Environmental Pollution

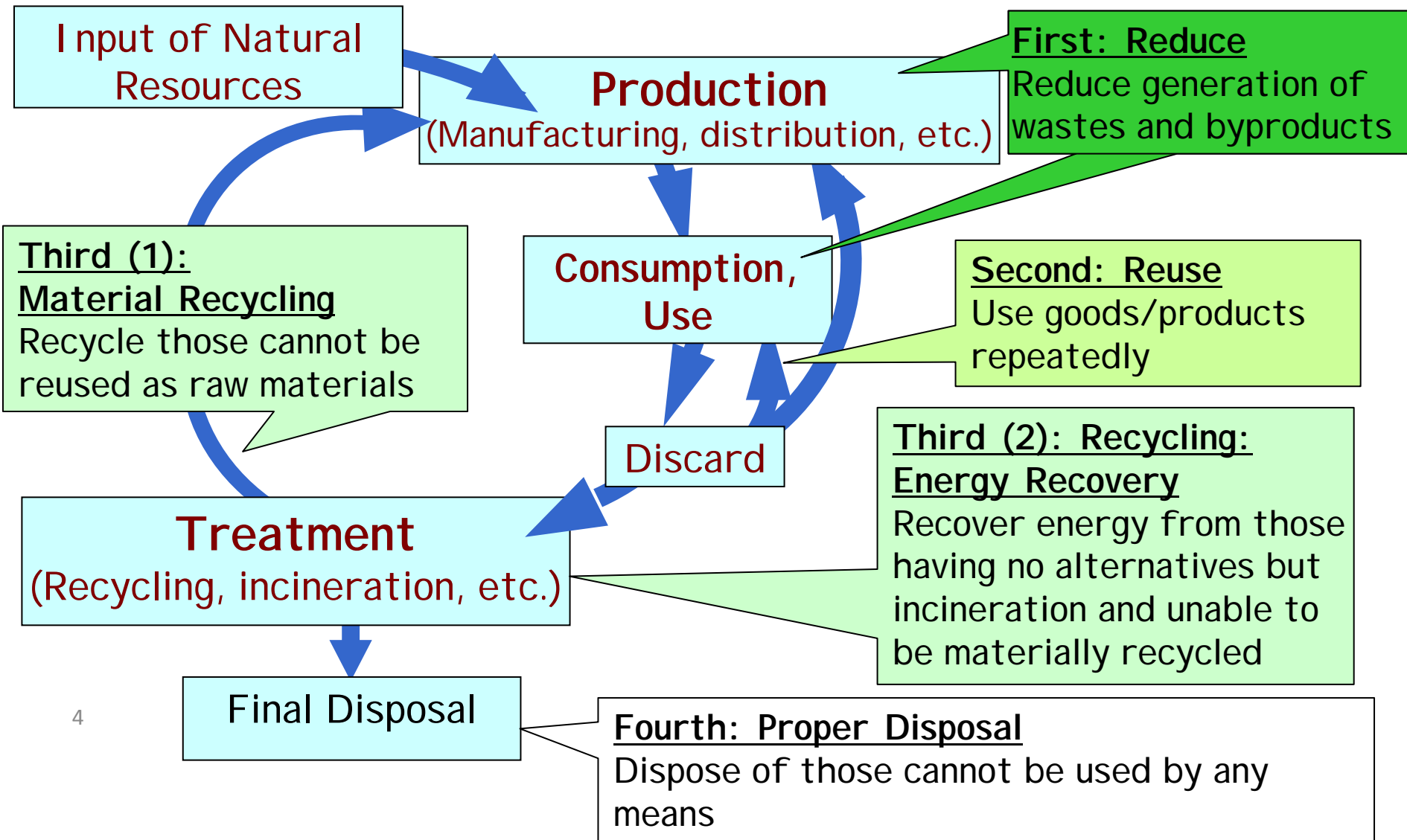
Sound Material-Cycle Society

# Concept of a Sound Material-Cycle Society

- Japan is undertaking the transition to a Sound Material-Cycle Society.

A sound material-cycle society, in which the consumption of natural resources is minimized and the environmental load is reduced as much as possible, is established by promoting reduction, reuse, recycling, thermal recycling and appropriate disposal.

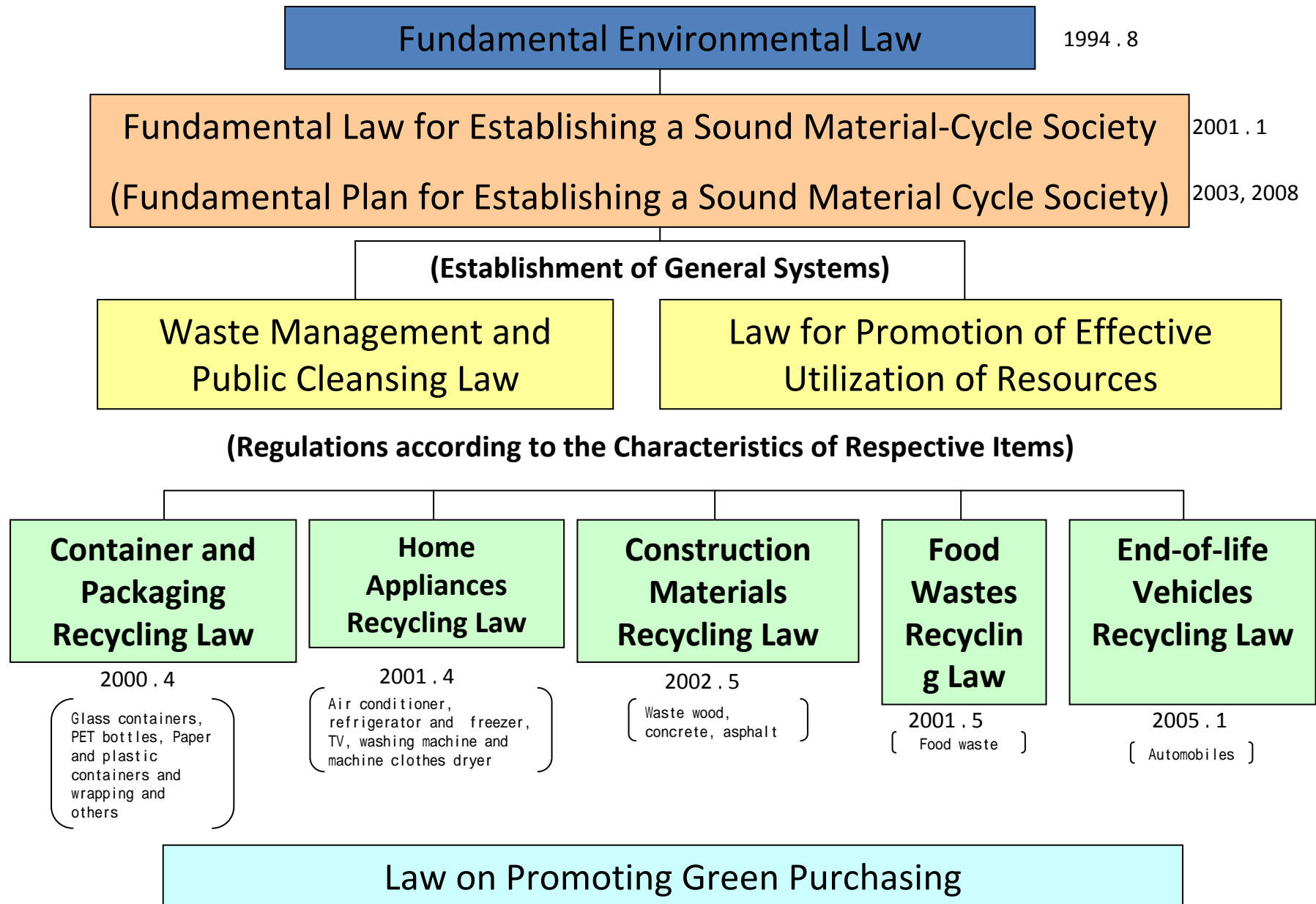
# Concept of a Sound Material-Cycle Society in Japan



# Fundamental Law for Establishing a Sound Material-Cycle Society

- Enacted in June 2000
- Overview
  - Specify the concept of “a sound material-cycle society” to be established
  - Define “recyclable resources” as useful things to be reused or recycled, regardless of being wastes(of no value) or not(valuable)
  - Prioritize the ways of treatment
    1. Reduce, 2. Reuse, 3. Material Recycling, 4. Energy Recovery, 5. Proper disposal
  - Clarify the responsibilities of stakeholders
    - Discharger’s Responsibility, Extended Producer’s Responsibility
  - Establish the “Fundamental Plan”
  - Set forth the fundamental policy measures for establishing a sound material-cycle society

# Legislative Framework to Establish a Sound Material-Cycle Society



# Fundamental Plan for Establishing a Sound Material-Cycle Society

- Decided by the Japanese Cabinet in 2003
- Revised in 2008
- Developed as a 10-year framework of programmes in accordance with the Johannesburg Plan of Implementation

## Current situation and Issues

- “Final disposal amount” improves towards year 2010 targets .
- Need to respond to global environmental issues such as worldwide resource limitation as well as global warming
- Necessary to further develop sound material cycle societies by 3Rs

## Mid-to-long term image of SMS

- Realise “Sustainable Society” by integrating with activities to realise “low carbon society” and “nature harmonious society”
- Realise “Stock-based Society”
- Locally-characteristic SMS (“Spheres of sound material cycle”)

## Activities of stakeholders

### Citizens

- Change in lifestyles

### Businesses

- Implementation of 3Rs
- Inter-industrial collaboration

### NGOs/NPOs, Universities and others

- Interface of collaboration and partnership
- Information dissemination

### National government

- Partnership among stakeholders and implementation of nation-wide activities

### Local governments

- Partnership with stakeholders and implementation of nation-wide activities



## Indicators and targets

### 【1 Material flow-based indicators】 Numerical target setting (FY 2015)

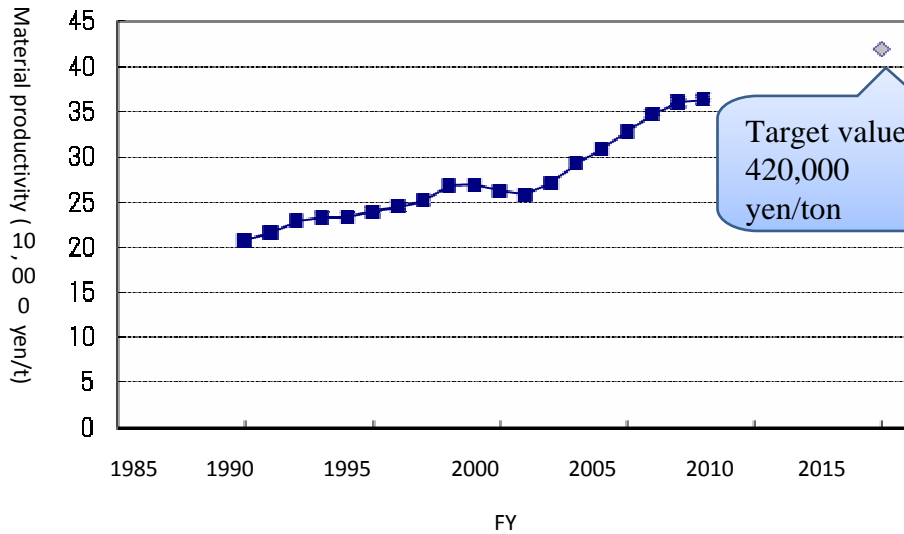
1. Input: Resource productivity → 420 thousand yen/ton (60% increase from FY 2000)
2. Circulation: Cyclical use rate → 14-15% (40-50% increase from FY 2000)
3. Output: Final disposal amount → 23 million tons (60% reduction from FY 2000)

### 【2 Other Indices related to effort】 Numerical target setting(FY 2015)

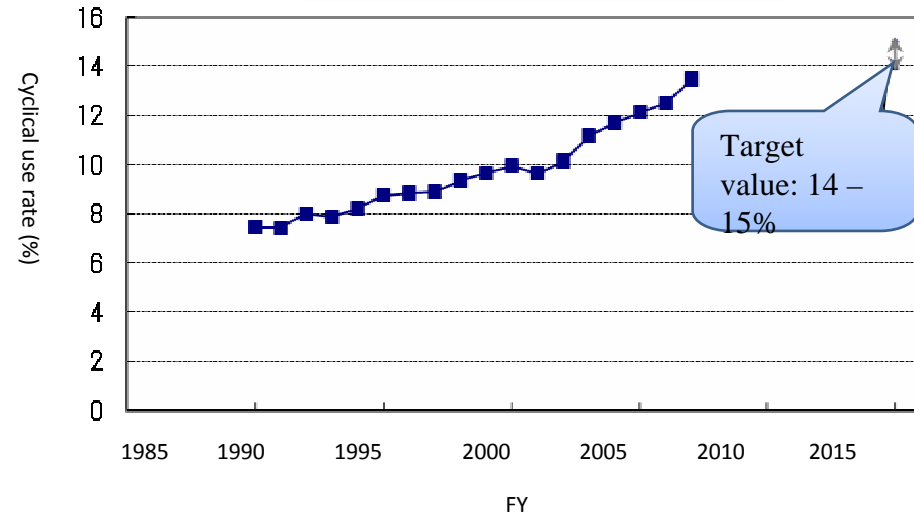
- 1.Reduction of municipal solid waste
- 2.Reduction of final disposal of industrial waste  
→ 60% reduction from FY 2000
- 3.Changes in awareness and actions of citizens  
→ Awareness: 90%, Actions: 50%
4. Promotion of Sound Material Cycle Businesses  
→ Double the market for Sound Material-Cycle businesses from FY 2000

# Material Flow Indicators

Inlet: resource productivity



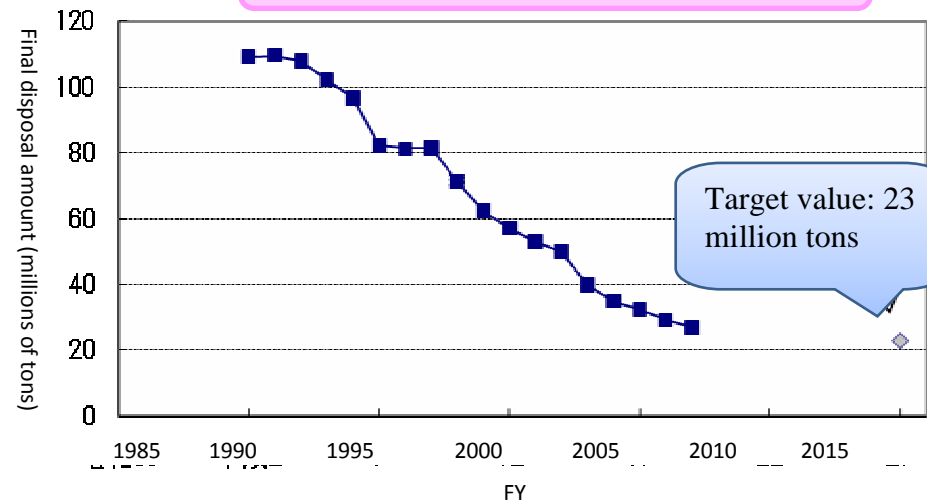
Cycle: cyclical use rate



## Favorable progress toward the index targets

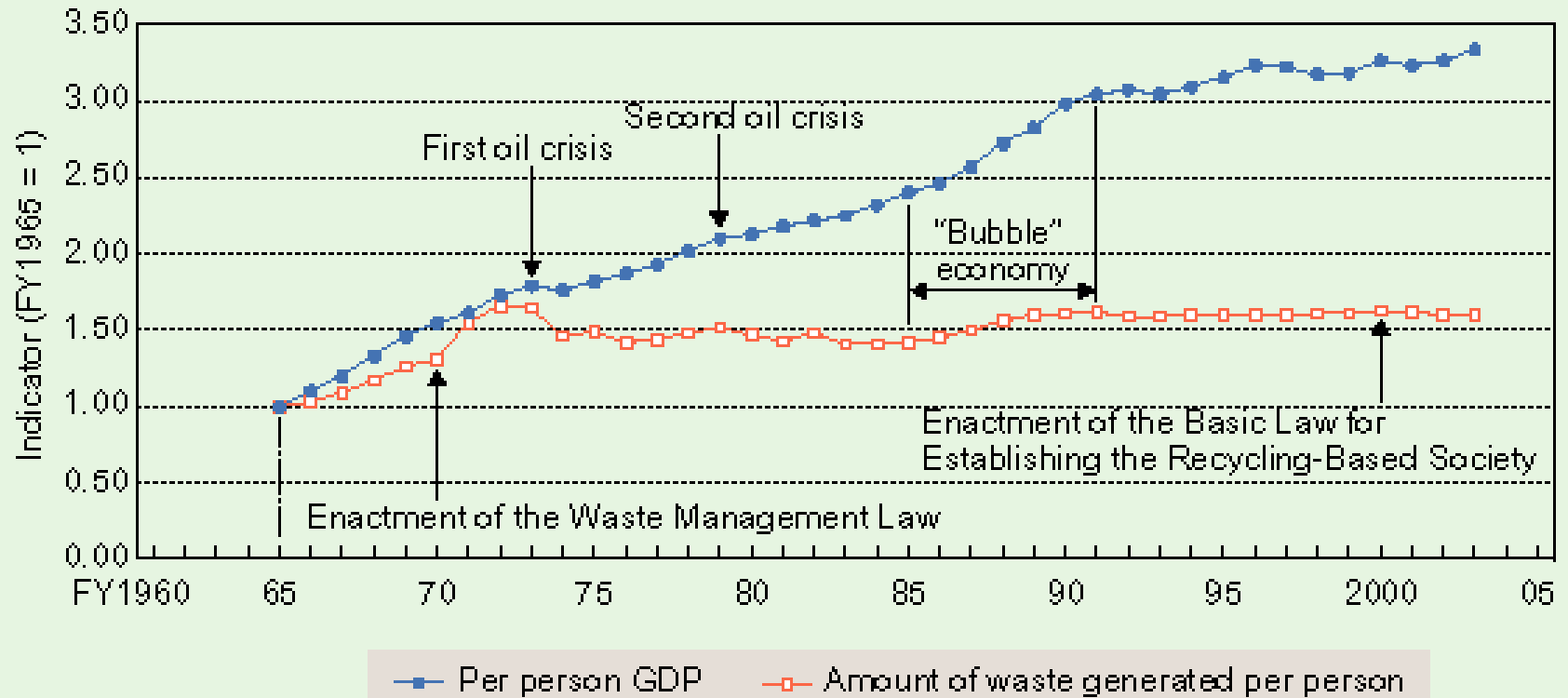
		FY 2015 (target year)	FY 2000	FY 2006	FY 2007	Compared with FY 2000
Resource productivity	10,000 yen/t	42	26.3	34.7	36.1	+37%
Cyclical use ratio	%	14 – 15	10.0	12.5	13.5	+3.5%
Final disposal amount	Municipal solid waste (millions of tons)	-	11	7	6	-40%
	Industrial waste (millions of tons)	-	45	22	21	-54%
	Total (millions of tons)	23	57	29	27	-53%

Outlet: final disposal amount



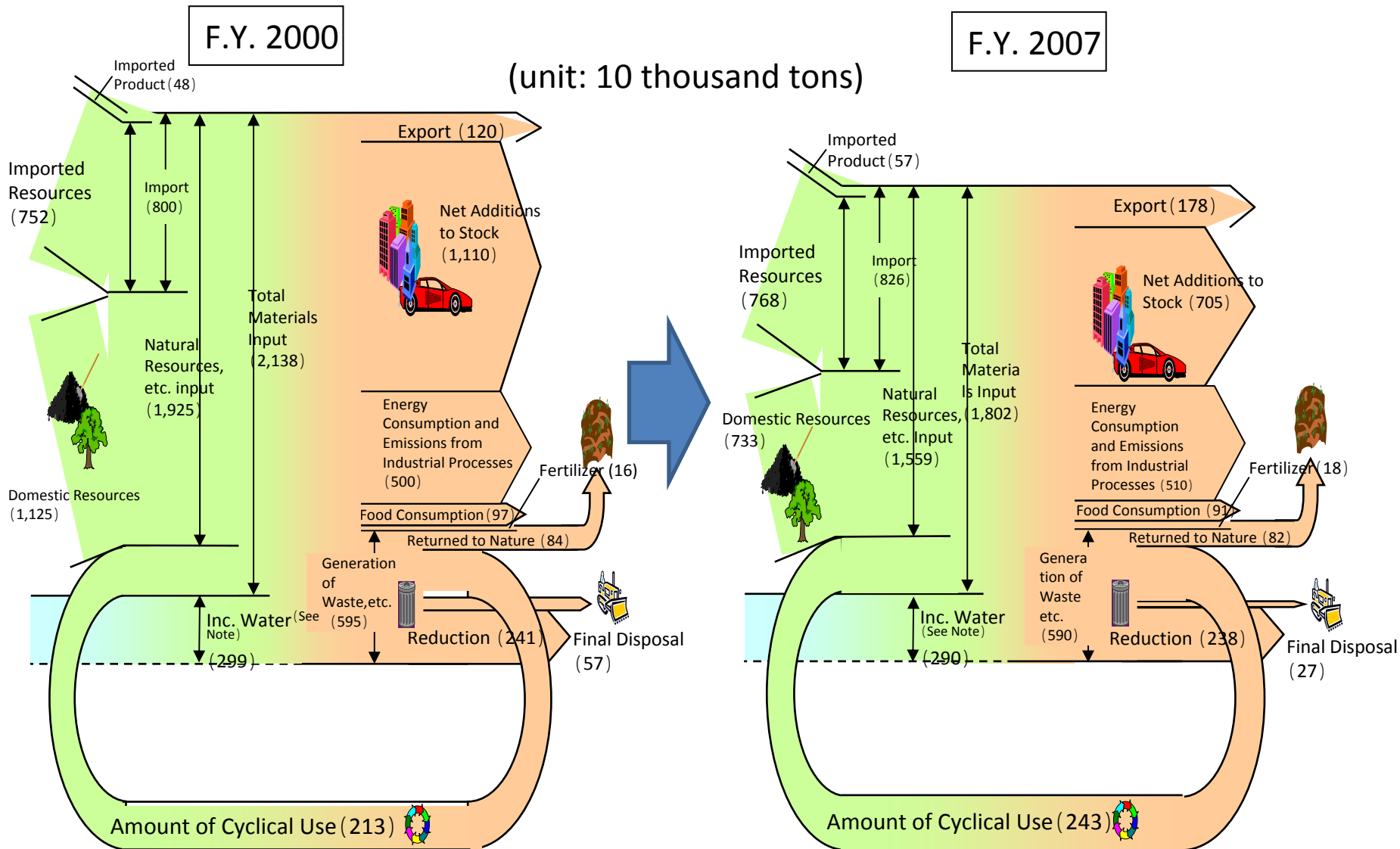
# Changes in GDP and amount of waste generated per person in Japan

Changes in GDP and amount of waste generated per person



Source: Compiled by the Ministry of the Environment based on GDP data, etc., provided by the Cabinet Office.

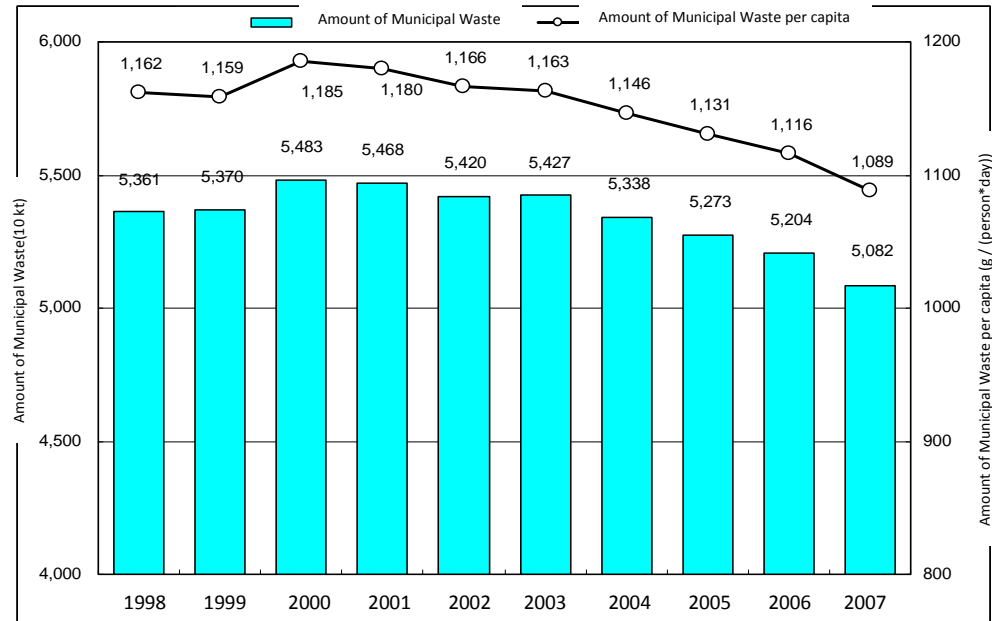
# Change of Material Flows in Japan



(Note) Including water: Input of water included in waste and the like (sludge, animal manure, human waste, waste acid, and waste alkali) and sediment and the like associated with economic activities (sludge from mining, building and water works and tailing from mining))

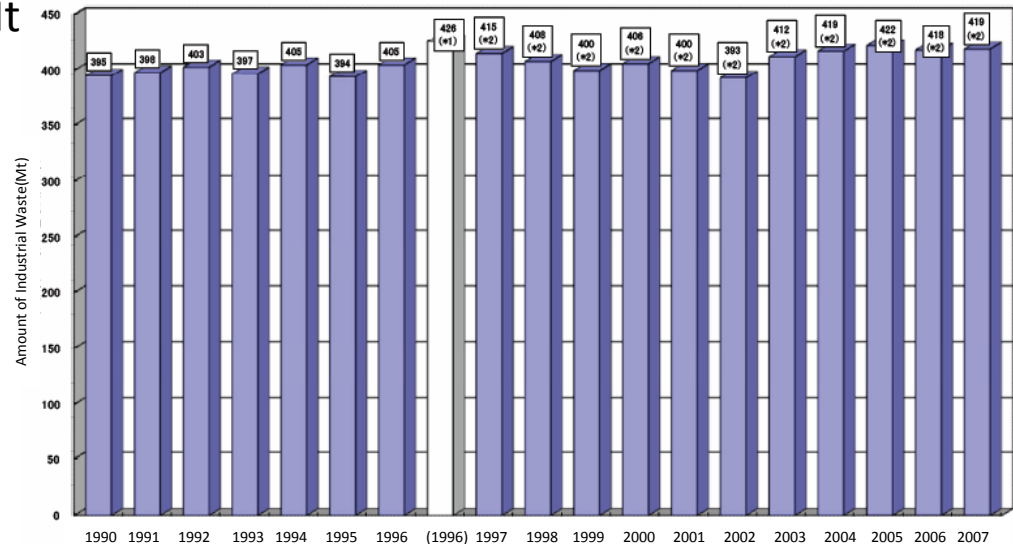
# Trends of Waste Discharge

▶ Municipal Waste Discharge is 50.82 Mt (F.Y. 2007)



▶ Industrial Waste Generation is 419Mt (F.Y. 2007)

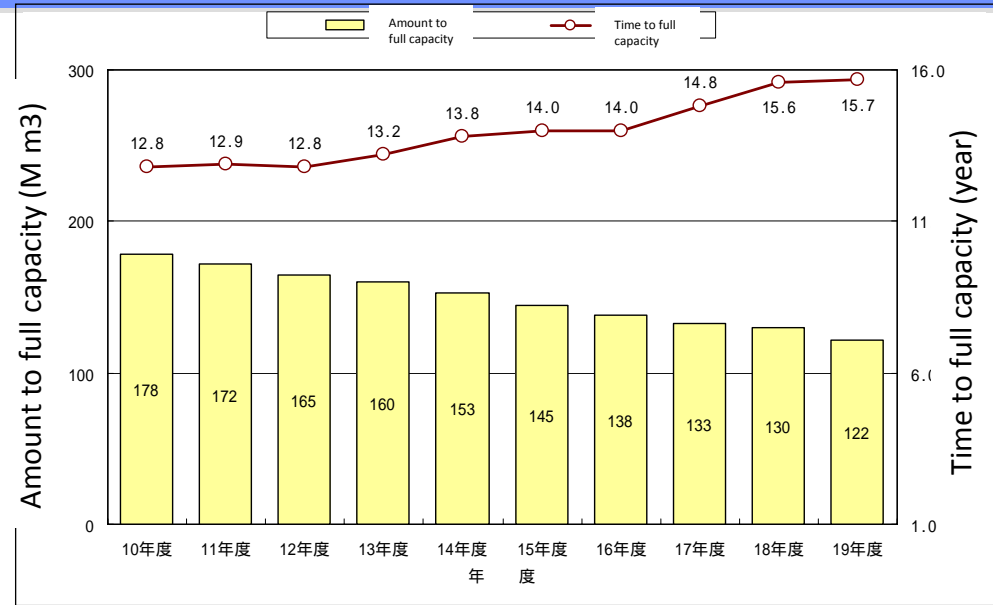
Amount of Waste Generation was increased around F.Y. 1990. After F.Y. 1990, the amount is remained at the same level of about 400Mt.



# Limited capacity of final disposal sites in Japan

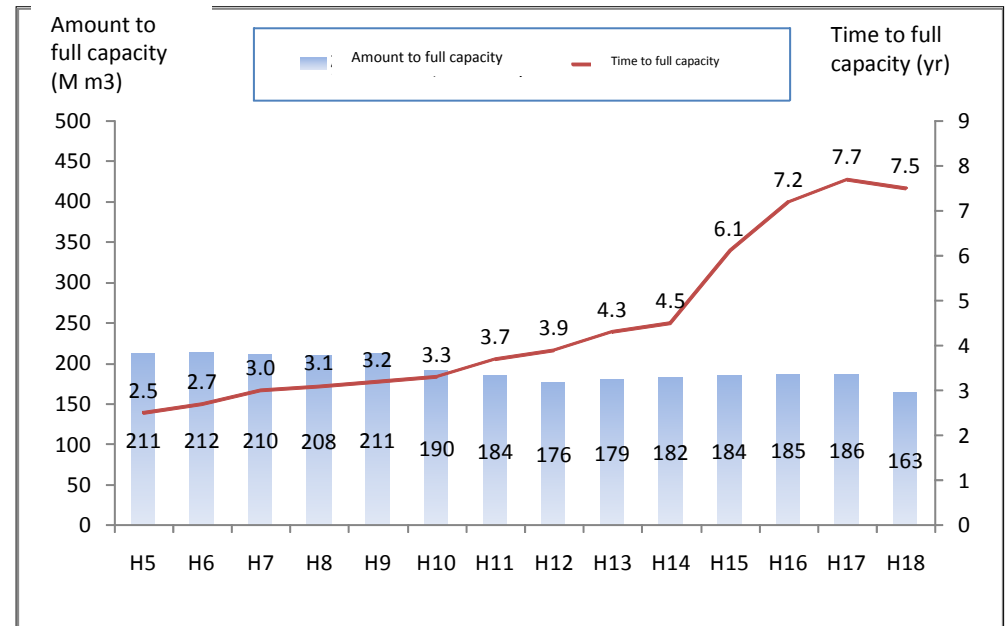
▶ Remaining Capacity of final disposal site for municipal waste is 15.7 years. (2007)

313 municipalities do not have public final disposal site.



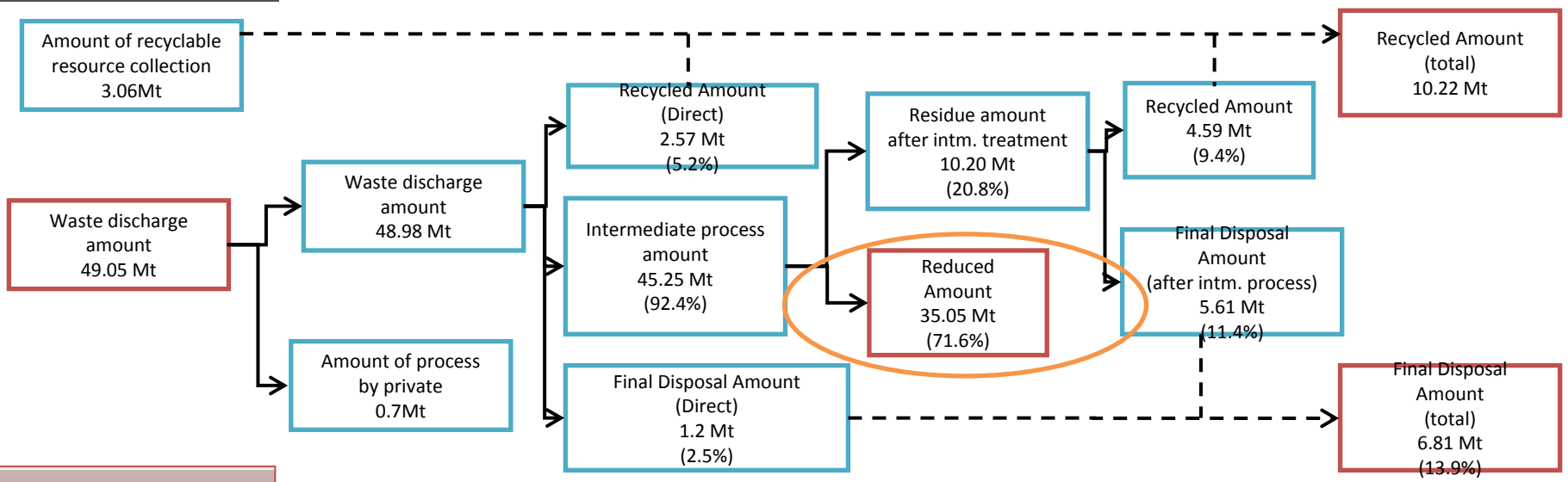
▶ Remaining capacity of final disposal site for industrial waste is 7.5 years. (2006)

Number of new installation of final disposal sites becomes less and less: 136 in 1998, 32 in 2005, and 28 in 2006

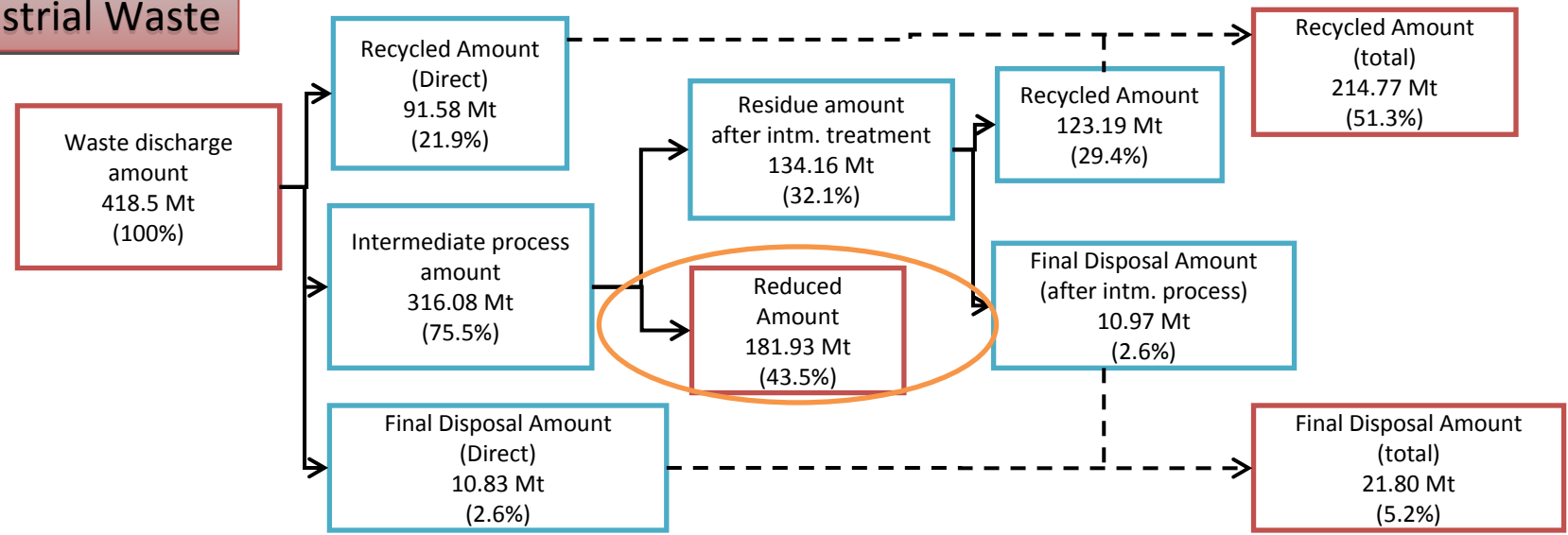


# Process Flow of the waste management: Incineration is major technology in Japan

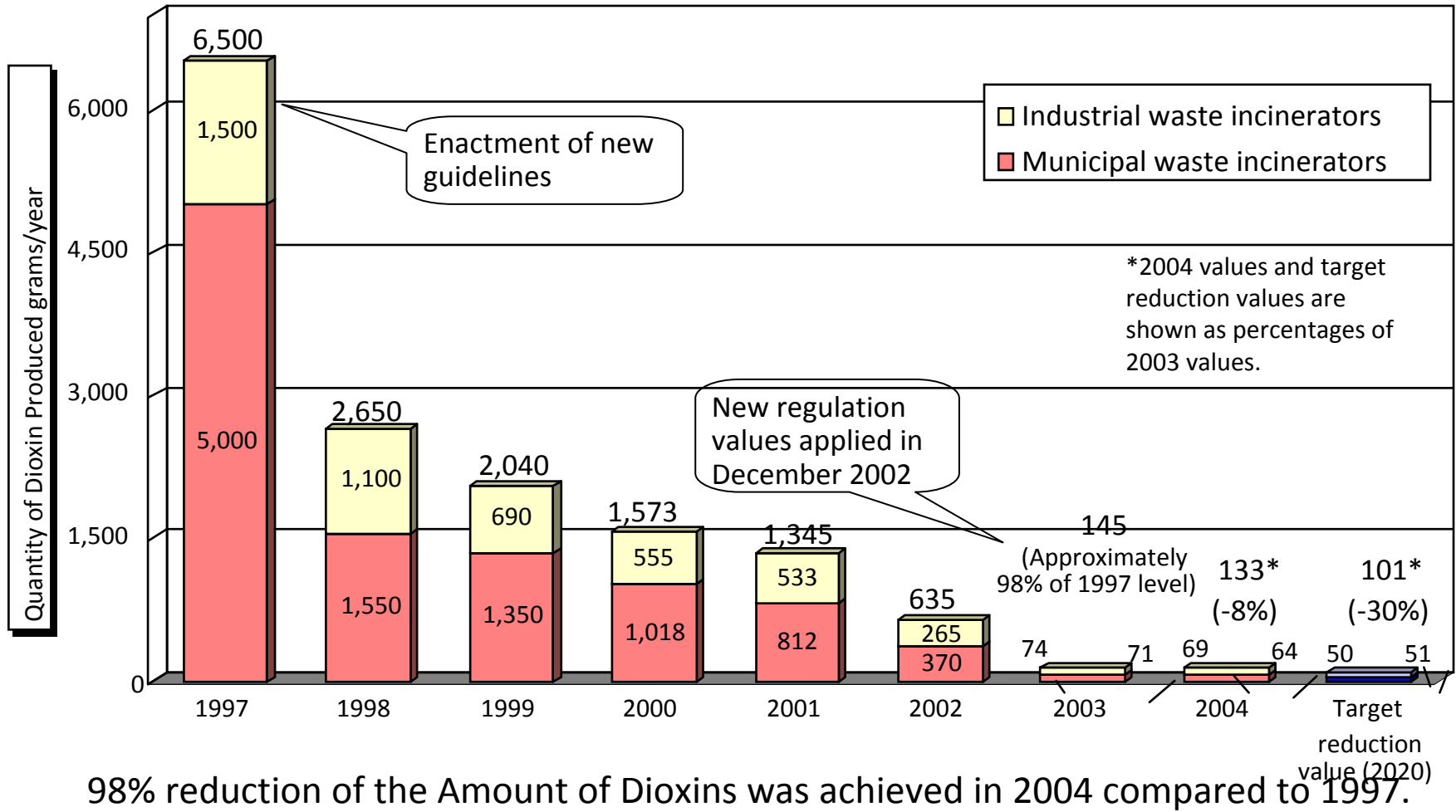
## Municipal Waste



## Industrial Waste



# Changing Quantity of Dioxins Produced by Waste Incinerators



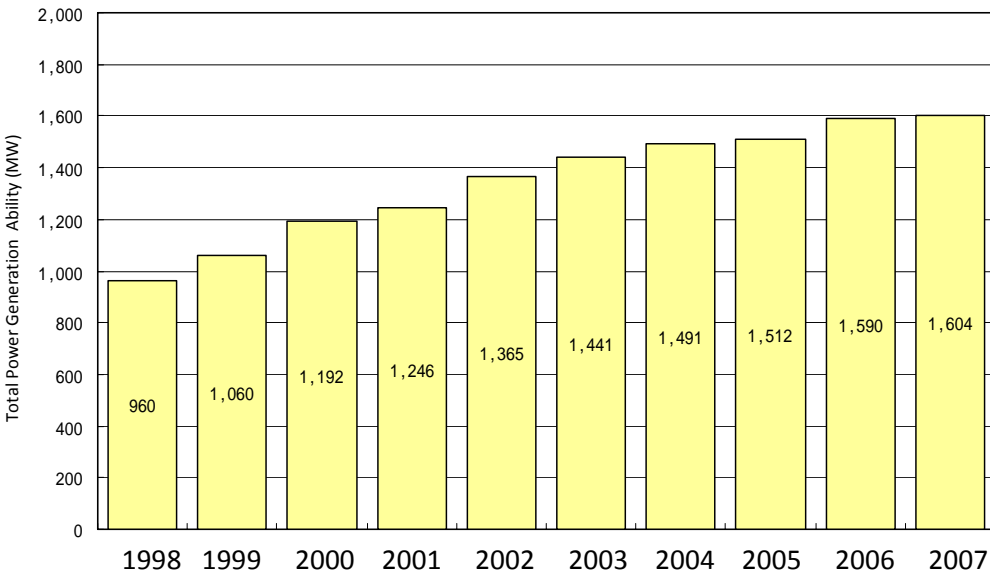


# Power Generation from Incineration

## Trend of the Number of Incineration Facilities

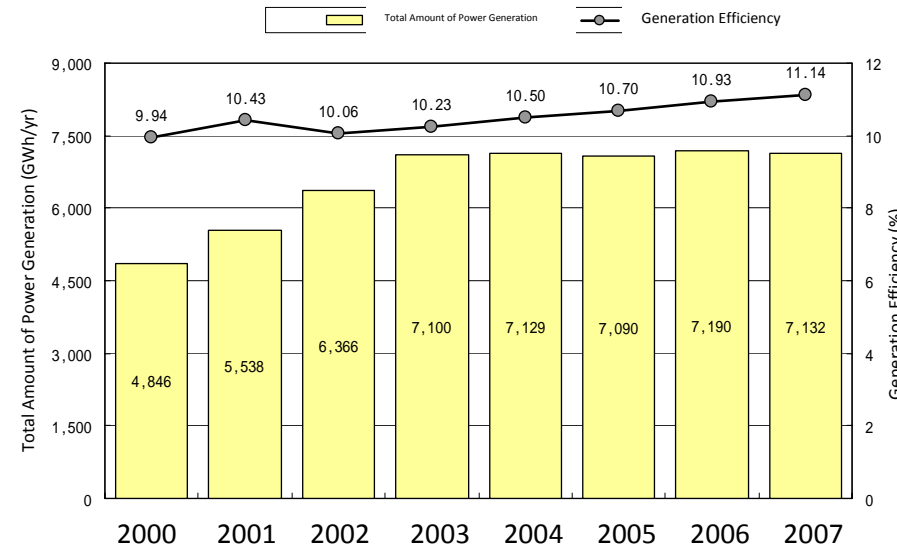
(Fiscal Year)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Num. of Incineration Facilities	1769	1717	1715	1680	1490	1396	1374	1318	1301	1285	1269
Num. of Power Generation Facilities	201 (11.4%)	215 (12.5%)	233 (13.6%)	236 (14.0%)	263 (17.7%)	271 (19.4%)	281 (20.5%)	286 (21.7%)	293 (22.5%)	298 (23.2%)	300 (23.6%)
total power generation ability (MW)		1,060	1,192	1,246	1,365	1,441	1,491	1,512	1,590	1,604	1,615

(Ministry of the Environment, Japan)



(Ministry of the Environment, Japan)

Improvement for total power generation ability of Incineration facilities



(Ministry of the Environment, Japan)

Improvement of generation efficiency and amount of power generation from incineration facilities

# Market scale of 3R business in Japan

	Business examples	Market (trillion yen)		Employment (thousand people)	
		2000	2007	2000	2007
<b>Supply of machinery, equipment and plants</b>	<ul style="list-style-type: none"> <li>• Intermediate treatment plants</li> <li>• Melting equipment</li> <li>• Oil manufacturing facilities from plastics</li> <li>• Composting equipment</li> <li>• Construction of final disposal sites</li> </ul>	0.8	0.5	2	8
<b>Supply of services</b>	<ul style="list-style-type: none"> <li>• Waste treatment</li> <li>• Resource recovery</li> <li>• Recycling</li> </ul>	2.8	3.0	195	130
<b>Supply of materials, consumer goods</b>	<ul style="list-style-type: none"> <li>• Reclaimed oil from plastics</li> <li>• PET-recycled fiber</li> <li>• Products made of timber from forest-thinning</li> <li>• Recycled products (e.g. scrap metals, recycled paper)</li> <li>• Refillable products</li> <li>• Repairs of machinery, furniture</li> </ul>	26	34.6	332	512
<b>Total of 3R business</b>		29.6	38.1	529	650
<b>Total of all eco-business</b>		41	69	1,060	1,300

# Eco Town

Eco Town:

- an eco-investment program in major industrial estates in which recycling business are operated for implementation of sectoral recycling laws and regulations.
- Central government provides subsidies to private sectors for construction of recycling plants.

